

In the Claims:

Please substitute the following claim 34 for the pending claim 34:

34. (once amended) A method of receiving an impulse radio signal, comprising the steps of:

- a. receiving a periodic timing signal;
- b. producing a timing trigger signal using at least said periodic timing signal;
- c. producing a template signal using said timing trigger signal;
- d. producing a delayed template signal using said timing trigger signal;
- e. producing a first correlator output signal by correlating a received impulse radio signal with said template signal;
- f. producing a second correlator output signal by correlating said received impulse radio signal with said delayed template signal;
- g. producing a data signal based on said first correlator output signal and said second correlator output signal;
- h. producing a time base adjustment signal based on said data signal, said first correlator output signal and said second correlator output signal; and
- i. using said time base adjustment signal to synchronize at least one of said periodic timing signal and said timing trigger signal with said received impulse radio signal.

Please substitute the following claim 37 for the pending claim 37:

37. (once amended) The method of claim 34, wherein step g. comprises the steps of:

(i) producing, based on said first correlator output signal and said second correlator output signal, a first data state signal corresponding to a first data state, a second data state signal corresponding to a second data state, a third data state signal corresponding to a third data state, and a forth data state signal corresponding to a fourth data state; and

(ii) determining which of said first data state signal, said second data state signal, said third data state signal, and said forth data state signal is greatest.

Please substitute the following claim 38 for the pending claim 38:

38. (once amended) The method of claim 34, wherein step g. comprises:

(i) producing, based on said first correlator output signal and said second correlator output signal, a plurality of first data state signals corresponding to a first data state, a plurality of second data state signals corresponding to a second data state, a plurality of third data state signals corresponding to a third data state, and a plurality of forth data state signals corresponding to a fourth data state;

(ii) adding said plurality of first data state signals to produce a first data state sum;

*Point
Sum
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- (iii) adding said plurality of second data state signals to produce a second data state sum;
- (iv) adding said plurality of third data state signals to produce a third data state sum;
- (v) adding said plurality of forth data state signals to produce a forth data state sum; and
- (vi) determining which of said first data state sum, said second state data state sum, said third data state sum, and said forth data state sum is greatest.

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Please substitute the following claim 39 for the pending claim 39:

39. (once amended) The method of claim 34, wherein step h. comprises:

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- (i) producing, based on said first correlator output signal and said second correlator output signal, a first timing adjustment increment, a second timing adjustment increment, a third timing signal adjustment increment, and forth timing adjustment increment; and
- (ii) determining whether said timing adjustment signal should comprise said first timing adjustment increment, said second timing adjustment increment, said third timing adjustment increment, or said forth timing adjustment increment.

Please substitute the following claim 40 for the pending claim 40:

40. (once amended) The method of claim 14, wherein step h. comprises:

(i) producing, based on said first correlator output signal and said second correlator output, a plurality of first timing adjustment increments, a plurality of second timing adjustment increments, a plurality of third timing adjustment increments and a plurality of forth timing adjustment increments;

(ii) adding said plurality of first timing adjustment increments to produce a first timing adjustment sum;

(iii) adding said plurality of second timing adjustment increments to produce a second timing adjustment sum;

(iv) adding said plurality of third timing adjustment increments to produce a third timing adjustment sum;

(v) adding said plurality of forth timing adjustment increments to produce a forth timing adjustment sum; and

(vi) determining whether said timing adjustment signal should comprise said first timing adjustment sum, said second timing adjustment sum, said third timing adjustment sum or said forth timing adjustment sum.

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Please substitute the following claim 63 for the pending claim 63:

63. (once amended) A method of transmitting impulse radio signals, comprising the steps of:

a. producing a first signal, a delayed first signal, a second signal, and a delayed second signal using periodic timing signal and an information signal;

b. producing, in response to said first signal, a first impulse radio signal consisting of a first type of waveform;

c. producing, in response to said delayed first signal, a delayed first impulse radio signal consisting of said first type of waveform;

d. producing, in response to said second signal, a second impulse radio signal consisting of a second type of waveform, wherein said second type of impulse waveform is substantially an inverse of said first type of impulse waveform;

e. producing, in response to said delayed second signal, a delayed second impulse radio signal consisting of said second type of waveform; and

f. combining at least one of said first impulse radio signal and said delayed first impulse radio signal with at least one of said second impulse radio signal and said delayed second impulse radio signal, thereby producing a flip modulated impulse radio signal.